

eggs averaged $1.23'' \times .9''$ in size. On both visits specimens of the birds were shot for identification.

It would be interesting to know where the actual line of demarcation between the habitats of this species and *Sterna minuta* occurs. The nearest place to this where I have taken the Lesser Tern's eggs is in that paradise of waders and sea-birds between Salonica and the mouth of the Vardar River, and *there* the species is *Sterna minuta*. I believe that *S. minuta* also breeds in the salt-marshes to the west of Smyrna, but I have not visited that place.

7. STERNA MEDIA Horsf. (Cat. B. xxv. p. 86).

On my second visit two pairs of this Tern were seen and one individual was shot. Two nests were found, each with a single egg, quite fresh. Our attention was first drawn to the presence of this species by finding an egg, and then, on waiting, one of the birds, easily recognised as distinct by its yellow bill, came hovering over us.

8. ANAS BOSCAS.

A female of this Duck was shot on my first visit. It was flushed from amongst some thick grass.

III.—*Ornithological Journal of a Voyage round the World in the 'Valhalla' (November 1902 to August 1903).* By M. J. NICOLL, M.B.O.U.

(Plate I.)

IN October last I received a kind invitation from the Earl of Crawford, F.R.S., to accompany him, as Naturalist, during his proposed cruise to the South Pacific, through the Straits of Magellan, in his yacht 'Valhalla,' R.Y.S.

The 'Valhalla,' a full-rigged ship with auxiliary steam, 1700 tons displacement, left Cowes on November 19th, 1902. The last birds that I saw in English waters were a number of Black Scoters (*Ædemia nigra*), which we observed just before we reached the Needles. Early on Nov. 20th we passed Ushant and entered the Bay. It was very much warmer

than when we left Cowes. About midday a Starling and a Greenfinch flew close past the ship, and a few Kittiwakes followed us. On Nov. 21st numbers of Shearwaters (probably *Puffinus gravis*) were seen. A small Skua followed us, as well as a Great Black-backed Gull. On Nov. 22nd I saw the first Storm-Petrels (*Procellaria pelagica*): at 2.30 p.m. Finistere was in sight: I then saw numbers of birds, Gannets, &c., and in the afternoon we passed close to a Little Auk (*Mergulus alle*) sitting on the water. At 1.30 p.m. on Nov. 23rd we passed the Balengas, a group of rocky islets off the coast of Portugal, where *Larus cachinnans* joined the Kittiwakes in our wake. Later in the day we passed numbers of Shags and Cormorants, and several large flocks of Little Auks. At 8.20 p.m. we dropped anchor off the mouth of the Tagus, and at 8 o'clock the next morning steamed up the Tagus to Lisbon. We landed shortly afterwards and visited the market. There were numbers of sardines on sale and I saw a Woodcock there, but little else of interest. During a visit to the Botanical Gardens I saw Chaffinches, Redbreasts, Willow-Wrens, and Chiffchaffs. On Nov. 25th we took the train to Cintra. I saw there *Alauda arvensis*, *Certhia familiaris*, *Sylvia atricapilla*, and *Anthus pratensis*.

We left Lisbon for Madeira on Nov. 26th, passing through numbers of Little Auks and Mediterranean Shearwaters (*Puffinus kuhli*). At 4 p.m. on Nov. 28th we passed Porto Santo, one of the Madeiran Islands, and soon afterwards I saw two small Petrels, possibly *Oceanites castro*. That night we lay-to off Madeira. The next morning I observed two Great Skuas (*Megalestris catarrhactes*) and *Sterna minuta*. This is rather far south for the Great Skua, even in winter, I believe. On shore I saw numbers of Blackcaps (*Sylvia atricapilla*) and heard several singing. Grey Wag-tails (*Motacilla melanope*) were abundant, and I saw several perching on the house-tops. I also observed two examples of *Motacilla alba* near the shore. At 2000 ft. up the hill I saw numbers of Wild Canaries (*Serinus canariensis*) sitting in the trees. On Nov. 30th we left Madeira for Las Palmas,

Gran Canaria. The next day, at 8 A.M., I got a mere glimpse of the Peak of Teneriffe. At 6.30 P.M. we anchored in Las Palmas Harbour. As we sailed the next morning I had not much time for collecting. We drove to Santa Brigada, 1400 ft., and on the way I saw the Canarian Kestrel, *Anthus bertheloti*, *Sylvia cinerea*, and a few Chiffchaffs (probably *Phylloscopus fortunatus*). At an elevation of 1400 ft. I saw some Grey Wagtails. In the evening we visited the Museum at Las Palmas, where there were a few birds. I shot the following birds at Gran Canaria:—

1. *PARUS TENERIFFÆ* (Less.).

Parus teneriffæ Gadow, Cat. B. viii. p. 14.

♂ ad. Dec. 2nd. Santa Brigada, 1400 ft.

This was the only example of the species seen. I shot it in a clump of elder-bushes close to the road; its note resembled that of our Great Tit.

2. *ANTHUS BERTHELOTI* (Bolle).

Anthus bertheloti Sharpe, Cat. B. x. p. 591.

♂ ♀. Dec. 3rd.

This Pipit is abundant in Gran Canaria, frequenting the bare stony slopes covered with tufts of coarse herbage. The note reminded me of that of the Yellow Wagtail. The gizzard contained small seeds and grit.

Examples of this species from the Canary Islands differ from those from Madeira in their smaller size, especially as regards the bill, and much paler coloration, being white below and less spotted on the breast.

On Dec. 3rd we left Las Palmas for St. Vincent, Cape Verde Islands. On Dec. 5th I saw two large Petrels, which were probably *Bulweria columbina*. The next day we entered the Tropics. In the morning an adult Kittiwake (*Rissa tridactyla*) followed us for some time. On Dec. 7th I saw a number of small Petrels, perhaps *Oceanites castro*. On Dec. 8th I noticed the first flying-fish. On Dec. 10th we sighted San Antonio, one of the Cape Verde Islands, and soon after I saw a small

Shearwater, *Puffinus assimilis* (?). That afternoon we arrived at St. Vincent and spent a day and a half there. Egyptian Vultures were abundant, and I saw several Brown Ravens (*Corvus umbrinus*). I shot examples of the following species at St. Vincent:—

1. SYLVIA CONSPICILLATA Marm.

Sylvia conspicillata Seeböhm, Cat. B. v. p. 22.

♂ ♀. Iris light brown.

This Warbler is fairly numerous in the tamarisk-bushes close to the sea at St. Vincent. Its call-note resembles that of a Wren.

2. PASSER JAGOENSIS Gould.

Passer jagoensis Sharpe, Cat. B. xii. p. 323.

Two young males. Iris dark brown.

These two Sparrows were killed by a native boy with a stone. I bought them from him, but I did not see any examples alive.

We left St. Vincent on Dec. 12th, and steamed straight to St. Paul's Rocks, which lie in mid-Atlantic, just under the Equator.

On Dec. 15th (lat. 6° 9' 54" N., long. 28° 22' 54" W.) I saw a very small Shearwater (*Puffinus assimilis*).

On Dec. 17th, at 1.30 p.m., we sighted St. Paul's Rocks. Several Boobies (*Sula leucogastra*) came off to have a look at us. There was a heavy swell, and the surf was beating over the reefs, but we landed without much difficulty at 3.30. St. Paul's Rocks are simply a cluster of islets some half a mile in circumference: the highest is about 64 ft. in elevation. The largest peak, "Booby Hill," is snow-white from the birds' droppings, which have formed in places a hard enamel over the surface of the rocks. The islets swarm with evil-looking Crabs (*Grapsus strigosus*). Three species of birds inhabit the locality, and I met with a migrant, probably a straggler, which I shall mention later. I obtained a small beetle, some small crickets,

and a moth. The water round the rocks swarms with sharks and many other fishes. Twenty of the former were caught from the ship. I collected examples of the following species of birds here :—

1. *STREPSILAS INTERPRES* (Linn.).

Arenaria interpres Sharpe, Cat. B. xxiv. p. 92.

I saw a Turnstone on both the days that we were on St. Paul's Rocks; the birds were very wild, and I could not get a shot at them.

2. *ANOUS STOLIDUS* (Linn.).

Anous stolidus Saunders, Cat. B. xxv. p. 136.

Three adults, two young, embryo from the egg, and egg.

The Common Noddy was abundant on the rocks. I found a considerable colony breeding at the base of Booby Hill. The noise which they made reminded me of a large rookery in the breeding-season. Their one egg was laid on the bare rock. Most of the eggs were hard-set. The birds appear to breed here all the year round, as Fitzroy visited these rocks on Feb. 16th, Ross on May 29th, the 'Challenger' on August 29th, and we were there on Dec. 17th, while on all these occasions young and eggs of the Noddy were found.

3. *MICRANOUS LEUCOCAPILLUS* (Gould).

Micranous leucocapillus Saunders, Cat. B. xxv. p. 145.

Two pairs. Bill, tarsi, and toes black.

The little Black-checked Noddy was much scarcer on the rocks than the Common Noddy, and I found only one small colony of its nests. They were composed of small heaps of weed, cemented to a projecting ledge of rock with the droppings of the birds, and had a curious bracket-like appearance. Only three contained eggs. These peculiar nests seem to belong exclusively to this species, as I did not find any of them occupied by the larger

A. stolidus.

This little Noddy was very wild, and I had to shoot those I wanted for specimens; the Common Noddy was easily caught by hand.

4. *SULA LEUCOGASTRA* (Bodd.).

Sula sula Grant, Cat. B. xxvi. p. 436.

One adult and two young. Bill yellowish ; tarsi and feet pale green (adult).

This Booby was certainly the most abundant bird on the islands. Its two eggs were laid on the bare rock, and were in every case surrounded by dead and decomposing flying-fishes. On Booby Hill it was impossible to walk without touching the birds. The half-grown young were far more spiteful than the adults and several of them chased us down the hill, biting at our legs.

Having stayed at St. Paul's Rocks for nearly two days we left on Dec. 18th. On the 19th we went through the ceremony of "Crossing the Line." The next day we reached Fernando Noronha, about 100 miles south of the Equator. This island, which is some 200 miles from the nearest point of South America, is a Brazilian penal settlement ; there are about 250 convicts there (all murderers), but prisoners are no longer sent to the island. There was a heavy surf breaking on the shore, but we landed without much difficulty and climbed to land over the rocks. Fortunately there were two English telegraph-operators on the island, and through them we were able to obtain permission to collect. The Governor, who could only speak Portuguese, was most obliging, and invited me into his garden to shoot birds. The next morning we rode across the island on ponies. The convicts have to work only a few hours a day, and most of them have houses of their own to live in. These houses are scattered all over the island, but every evening a bugle is blown and the prisoners have to assemble at a call-over.

The most abundant bird on the island is a Dove. Tropic-birds and Frigate-birds are also fairly plentiful ; the latter were breeding high up on a neighbouring islet, St. Michael's Mount. I also saw a pair of *Gygis candida* flying over the island. There are two species of lizards on the island, one of which is peculiar to it, and the other Brazilian.

A crab (*Grapsus strigosus*) is common on the rocks. On the second day of our visit I saw *Sula leucogastra*, *Anous stolidus*, and *Micranous melanogenys*. We left Fernando Noronha on Dec. 22nd.

There are no indigenous mammals at Fernando Noronha, but rats (*Mus rattus*) have been imported, and the common mouse has also been introduced. Two of the latter which I shot were of a rufous fawn-colour.

Specimens of the following birds were obtained :—

1. VIREO GRACILIROSTRIS.

Vireo gracilirostris Sharpe, Journ. Linn. Soc., Zool. xx. p. 178 (1890).

A male and four females. Bill dark horn-brown; tarsi and toes lead-blue, with a greenish tinge.

This little bird, somewhat resembling a Reed-Warbler in its actions, is peculiar to the island. The types, which are in the British Museum, were obtained by Dr. H. N. Ridley during his visit in 1887.

I found this species fairly abundant in the small fig-trees with which parts of the island are covered. I also obtained specimens in the Governor's garden. It has a loud call-note, resembling the "*chizzick*" of a Wagtail. It is an active little bird and continually on the move amongst the leaves, now and then darting out after an insect.

2. ELAINEA RIDLEYANA.

Elainea ridleyana Sharpe, P. Z. S. 1888, p. 107; id. Cat. B. xiv. p. 139.

♀. Iris dark brown; bill dark brown; tarsi and toes black.

This Tyrant-bird was discovered by Dr. Ridley in 1887 and is peculiar to the island. I only met with a pair, which were in the Governor's garden. I shot both, but lost one in the top of a palm-tree. I heard no note uttered by this bird. It raises the feathers on the top of its head, which form a small crest. I was told it was not uncommon in some parts.

3. ZENAIDA AURICULATA (Temm.).

Zenaida auriculata Salvad. Cat. B. xxi. p. 384.

♂ ad. This small Dove is the most abundant bird on the island. It is very difficult to find it when shot, owing to the dense undergrowth. I saw several large flocks sitting on the branches of a species of fig-tree which grows all over the island. Its note is a loud rattling "coo."

4. STREPSILAS INTERPRES (Linn.).

Arenaria interpres Sharpe, Cat. B. xxiv. p. 92.

I shot two immature Turnstones out of a flock of about thirty, which was apparently entirely composed of young birds.

5. STERNA FULIGINOSA (Gm.).

Sterna fuliginosa Saunders, Cat. B. xxv. p. 106.

This Tern was abundant and breeding on the island. I was too late to find eggs.

6. PHAËTHON LEPTURUS (Lacép. & Daudin).

Phaëthon lepturus Grant, Cat. B. xxvi. p. 453.

♂ ♀. Bill yellowish green; tail-streamers washed with palest pink.

I saw several of these birds sailing up and down past the Settlement on the island. Lord Crawford shot the two specimens the day after we arrived.

On Dec. 26th we anchored off Bahia, and soon afterwards went ashore. We were delayed there till Jan. 5th, 1903. The British Consul invited me to collect in his garden, in which I obtained several birds, butterflies, &c. We made five or six excursions to the Island of Itaparica, about ten miles across the bay from Bahia. We used to go in the steam-launch as close to the shore as we could, and then land in a small Berthon boat. This island was swarming with birds and butterflies. It was covered in places with thick tropical jungle, with open glades between. I heard many song-birds, and a Thrush rivalled our Blackbird in the richness of its notes.

There were very few sea-birds at and near Bahia during our stay; I only saw *Sula leucogastra*. I obtained examples of the following species at Bahia and Itaparica:—

- | | |
|---|--|
| 1. <i>Asturina nattereri</i> <i>Scl. & Salv.</i> | 18. <i>Pitangus sulphuratus</i> (<i>Linn.</i>). |
| 2. <i>Troglodytes musculus</i> <i>Naum.</i> | 19. <i>Myiarchus ferox</i> (<i>Gm.</i>). |
| 3. <i>Progne tapera</i> (<i>Linn.</i>). | 20. <i>Tyrannus melancholicus</i> <i>Vieill.</i> |
| 4. <i>Polioptila leucogastra</i> <i>Newied.</i> | 21. <i>Synallaxis cinnamomea</i> (<i>Gm.</i>). |
| 5. <i>Dacnis cayana</i> (<i>Linn.</i>). | 22. <i>Chrysolampis moschitus</i>
(<i>Linn.</i>). |
| 6. <i>Euphonia violacea</i> (<i>Linn.</i>). | 23. <i>Agyrtria leucogastra</i> (<i>Gm.</i>). |
| 7. <i>Calliste flava</i> (<i>Gm.</i>). | 24. <i>Eupetomena macrura</i> (<i>Gm.</i>). |
| 8. <i>Tanagra sayaca</i> <i>Linn.</i> | 25. <i>Chrysoptilus chrysomelas</i>
(<i>Malh.</i>). |
| 9. <i>Rhamphocelus brasilius</i>
(<i>Linn.</i>). | 26. <i>Ceophloeus lineatus</i> (<i>Linn.</i>). |
| 10. <i>Tachyphonus melaleucus</i>
(<i>Sparrm.</i>). | 27. <i>Chelidoptera brasiliensis</i> <i>Scl.</i> |
| 11. <i>Spermophila cærulescens</i>
(<i>Bonn. & Vieill.</i>). | 28. <i>Crotophaga ani</i> <i>Linn.</i> |
| 12. <i>Volatinia jacarini</i> (<i>Linn.</i>). | 29. <i>Guirapirigua</i> (<i>Buff.</i>). |
| 13. <i>Fluvicola climacura</i> (<i>Vieill.</i>). | 30. <i>Scardafella squamosa</i> (<i>Temm.</i>
& <i>Knip.</i>). |
| 14. <i>Machetornis rixosa</i> (<i>Vieill.</i>). | 31. <i>Chamaepelia minuta</i> (<i>Linn.</i>). |
| 15. <i>Todirostrum cinereum</i> (<i>Linn.</i>). | 32. <i>Chamaepelia talpacoti</i> (<i>Temm.</i>
& <i>Knip.</i>). |
| 16. <i>Elainea pagana</i> (<i>Licht.</i>). | 33. <i>Ægialitis collaris</i> (<i>Vieill.</i>). |
| 17. <i>Myiozetes similis</i> (<i>Spir.</i>). | |

The following notes refer to some of the species mentioned in this list:—

Calliste flava (*Gm.*).—Common at Bahia and Itaparica. Both specimens obtained were males.

Fluvicola climacura (*Vieill.*).—This bird is common at Bahia, especially in the town, where it may be seen walking about in the streets. It is very tame.

Todirostrum cinereum (*Linn.*).—This little bird is fairly common near Bahia, where I found a pair building a very large nest at the top of a tall tree. I only once saw a bird of this species at Itaparica.

Chrysolampis moschitus (*Linn.*).—One of the commonest Humming-birds on Itaparica. The British Consul told me that he once purchased a pure white individual of this species from an old native bird-stuffer in Bahia.

Agyrtria leucogastra (*Gm.*).—I saw a few examples of this species on Itaparica; their flight is very rapid.

Eupetomena macrura (Gm.).—This Humming-bird is fairly abundant on Itaparica: it utters a shrill chirp while feeding.

Chelidoptera brasiliensis Sel.—I saw two individuals only of this species sitting on the top of a dead tree.

Crotophaga ani Linn.—This bird is very common at Bahia and Itaparica, and is usually seen in parties of about a dozen.

From Bahia we steamed to Monte Video, not putting in at Rio Janeiro, as we heard that the plague was very bad there and we did not want to be quarantined at our next port. On Jan. 9th (lat. $21^{\circ} 23' 39''$ S., long. $40^{\circ} 1'$ W.) I saw several large Petrels (*Estrelata arminjoniana*, I believe) which followed us for three days. They were flying quite close to the ship, but unfortunately it was too rough to lower a boat. Amongst these birds I saw two or three of the same size, but nearly black—these may have been *Æ. trinitatis*.

On Jan. 12th (lat. $33^{\circ} 29' 36''$ S., long. $50^{\circ} 3' 47''$ W.) I saw two large Albatrosses (*Diomedea exulans*); these were the first met with. The next day, about twelve hours before we got to Monte Video, I saw a Giant Petrel (*Ossifraga gigantea*) and several Black-backed Gulls (*Larus dominicanus*).

On Jan. 14th we anchored at Monte Video. I was not able to collect birds there, but I saw examples of the following species in the harbour or flying about:—*Phalacrocorax nigripennis*, *Cygnus nigricollis*, and *Larus dominicanus*. I made an excursion from Monte Video to Las Piedras, two hours by train. I saw there a large Sandpiper (probably *Totanus solitarius*) sitting by a small pool. *Passer domesticus* has been introduced and is common in the streets of Monte Video. We left on Jan. 20th for the Magellan Straits, having first taken a pilot on board. On Jan. 23rd (lat. $39^{\circ} 7' 40''$ S., long. $57^{\circ} 30' 24''$ W.) there were several Albatrosses and Petrels about.

On Jan. 27th, a few hours before we arrived at the entrance of the Magellan Straits, I saw numbers of Diving Petrels (*Pelecanoides urinatrix*) and a Penguin.

On Jan. 28th, as there was a gale blowing against us, we had to anchor all day.

On Jan. 29th we went through the first narrows and passed Elizabeth Island, and then through the second narrows, where we passed hundreds of Terns (*Sterna hirundinacea*), Penguins, Albatrosses (*Diomedea melanophrys*), and Diving Petrels. There was one Giant Petrel. On the shore we could see many Huanacos walking about. In the afternoon we arrived at Punta Arenas, the only town in the Straits. Here I found that shooting birds was forbidden; however I managed to get permission from the Governor to collect a few. The hills behind the town are covered with forests of beech trees (*Fagus antarctica*). We left Punta Arenas on Feb. 3rd. I obtained examples of the following birds there:—

1. *TACHY CINETA MEYENI* (Bp.).

Tachycineta meyeri Sharpe, Cat. B. x. p. 116.

♀. Iris dark brown; bill black; tarsi and toes dark brownish.

I saw some of these Martins flying round the houses at Punta Arenas. The tarsi and toes are not feathered as in our House-Martin, otherwise they might easily be mistaken for that species. The cry is very similar.

2. *ZONOTRICHIA CANICAPILLA* Gould.

Zonotrichia canicapilla Sharpe, Cat. B. xii. p. 609.

♂ ♀. Iris dark brown; bill and feet brownish flesh-coloured.

This Finch is very common at Punta Arenas, where I found it amongst the barberry-bushes. Its call-note resembled that of our Yellow-hammer. The adult obtained on Jan. 30th was in full moult.

3. *CENTRITES NIGER* (Bodd.).

Centrites niger Selater, Cat. B. xiv. p. 61.

♂. Iris dark brown; bill, tarsi, and toes black.

This little bird was abundant at Punta Arenas, but during our short stay there I saw only two adults. I met with it both along the shore and a short distance inland, where I

found it perching on the barberry-bushes. It was not easy to approach and was very restless in its movements.

4. ELAINEA ALBICEPS (d'Orb. & Lafr.).

Elainea albiceps Selater, Cat. B. xiv. p. 141.

♀ juv. Punta Arenas.

♀. Gray's Harbour, Smythe's Channel.

The immature specimen shot at Punta Arenas was met with in the barberry-bushes close to the shore. The adult had a conspicuous white crest. I procured it at Gray's Harbour, Smythe's Channel, in an almost impenetrable thicket. Its note somewhat resembled the pipe of a Bullfinch.

5. THINOCORUS RUMICIVORUS (Eschscholtz).

Thinocorus rumicivorus Sharpe, Cat. B. xxiv. p. 719.

♂ juv. Iris dark brown; bill yellowish; tarsi and toes yellow.

I shot this curious little bird close to the town of Punta Arenas. I put it up from a rubbish-heap of tin cans, kettles, &c., close to the sea. A few days afterwards I saw a small flock further along the shore. They were very wild. The flight of this species resembles that of a Dunlin. I did not hear it utter any cry.

6. STERNA HIRUNDINACEA (Less.).

Sterna hirundinacea Saunders, Cat. B. xxv. p. 52.

This Tern was abundant in the Straits of Magellan, especially off Dungeness Point, at the eastern extremity, where I saw hundreds as we steamed past. I shot two adult examples from the beach near Punta Arenas, where I found a fair number of individuals. I brought them within shot by knocking two large flints together—a very good way to attract Terns.

7. CHLOËPHAGA MAGELLANICA (Gm.).

Chloëphaga magellanica Salvadori, Cat. B. xxvii. p. 132.

The Governor of the Straits of Magellan, Capt. Gomez, gave us two goslings of this species alive; but when we entered a warmer climate they both died, just as they were getting their feathers.

After leaving Punta Arenas, we had to anchor every night in the Straits, where there are numerous natural harbours.

When we had passed the Straits we proceeded up Smythe's Channel, eventually coming out into the Gulf of Peñas. I saw numbers of birds in the Straits of Magellan, but in Smythe's Channel there were very few except Cormorants. Land-birds were very scarce, although the country is perfectly suitable for them.

Going through Smythe's Channel we had several good views of glaciers, and one day we were steaming through broken ice for several hours. The different anchorages were very much alike as regards scenery. The shore rose almost straight out of the water, forming very high hills of several thousands of feet, behind which in many places were higher snow-capped mountains. All these hills are densely covered with beech trees (*Fagus antarctica*). There are two species of beech in the west of Magellan Straits and Smythe's Channel—the one just mentioned, which is deciduous, and the "evergreen beech" (*Fagus betuloides*), which never loses its leaves. The forests on the hills are practically untrodden, and it is impossible to get through them in most places without cutting a path. The ground amongst the trees is strewed with hundreds of years' accumulation of rotting timber, which makes climbing the hills very difficult, as the explorer often slips into decayed wood above his waist. The water in these anchorages looks very black, and is studded in many places with small rocky islands, covered with shrubs and flowers. Almost the only bird-life to be seen consists of flocks of Cormorants with a few Gulls and Steamer-Ducks. We anchored every evening about 4 o'clock and had boats down at once. We used to row round the harbours and land on some of the islets in order to get what specimens we could.

The following is a list of birds obtained on the Patagonian coast between Punta Arenas and the Gulf of Peñas:—

1. IBYCTER CHIMANGO (Vieill.).

Ibycter chimango Sharpe, Cat. B. i. p. 41.

♀. Molineux Sound, Smythe's Channel. Iris black; bill, tarsi, and toes greenish yellow.

I found this species fairly abundant in Molineux Sound, where I put up several individuals from the water's edge. I shot one which was sitting cawing in a dead tree.

2. *TURDUS MAGELLANICUS* (King).

Turdus magellanicus Seeböhm, Cat. B. v. p. 223.

This handsome Thrush was not common when we were in the Straits. I met with only three individuals, and saw none until we got to the extreme west of the Straits. It utters a low plaintive whistle. The young bird in first plumage is not unlike our Blackbird (*Turdus merula*) at that stage, but has a dark, almost black, crown.

3. *PHRYGILUS GAYI* (Eydoux et Gerv.).

Phrygilus gayi Sharpe, Cat. B. xii. p. 781.

Gray's Harbour, Smythe's Channel. Sex uncertain. Iris black; bill lead-coloured; tarsi and toes brown.

The example obtained was the only one which I saw.

4. *CINCLODES PATAGONICUS* (Gm.).

Cinclodes patagonicus Selater, Cat. B. xv. p. 22.

Puerto Bueno anchorage, Smythe's Channel. Sex uncertain. Iris black; bill black; tarsi and toes dark brown.

This little bird was fairly numerous in the anchorages, where it was observed climbing over the rocks and uttering a shrill cheeping note. I saw one several times on board the ship examining the rigging. One bird tried to settle on the boat when we were out shooting.

5. *OXYURUS SPINICAUDA* (Gm.).

Oxyurus spinicauda Selater, Cat. B. xv. p. 30.

♂. Iris black. Churruca Bay, Feb. 4th.

In the extreme west of the Straits of Magellan this species is almost the only land-bird to be seen. While walking through the dripping untrodden forests I several times had an individual of this species following me the whole time, uttering its monotonous shrill chatter. It is curious that, although possessing stiff-pointed rectrices, it never seems to use its tail like our Common Creeper (*Certhia*), but hops about the bushes somewhat as a Tit does; at least that is my experience, and I have often watched it for a considerable time.

6. SYLVIORTHORHYNCHUS DESMURSI (Gay).

Sylviorthorhynchus desmursi Selater, Cat. B. xv. p. 31.

I saw and shot two examples of this curious Wren-like bird at Gray's Harbour. They were in the most dense undergrowth, and were so tame that I could not get more than four or five yards from them: the first I blew to pieces and the other I lost in the undergrowth. The enormously long tail is held straight out behind, *not* cocked up. The cry is much like the call-note of our Wren.

7. CERYLE STELLATA (Meyen).

Ceryle stellata Sharpe, Cat. B. xvii. p. 123.

One male and two females, Feb. 5th, 8th, and 9th. Smythe's Channel. Iris black: bill black; tarsi and toes brown in front, reddish behind.

I saw several of these fine Kingfishers in Smythe's Channel. They were usually seen sitting on an overhanging tree in some quiet backwater. Their cry, when alarmed, was a loud laugh.

8. RALLUS VIGILANTIS (Sharpe).

Limnopardalus vigilantis Sharpe, Cat. B. xxiii. p. 31.

♂ ad. Iris red; bill green, blue at base; tarsi and toes dull red. Puerto Bueno anchorage.

I met with only a single example of this curious Rail. It ran out of some rushes on a small island. I walked all through the herbage, but did not find another.

9. EUDROMIAS MODESTA (Licht.).

Zonibyx modesta Sharpe, Cat. B. xxiv. p. 238.

Two young males. Port Gallant, Feb. 3rd, 1903. Iris black.

I saw a small flock of these Dotterels at Port Gallant anchorage. All of them appeared to be immature. The two examples that I obtained had the nape of the neck covered with down. Their note was a shrill whistle.

10. LARUS DOMINICANUS Licht.

Larus dominicanus Saunders, Cat. B. xxv. p. 245.

Iris pale yellow; bill yellow, with red spot; eyelid red; tarsi and feet slate-grey, in the male washed with yellow.

This Gull was abundant in the Straits of Magellan and Smythe's Channel. The males appeared to have larger bills than the females.

11. *MEGALESTRIS CHILENSIS* (Saunders).

Megalestris chilensis Saunders, Cat. B. xxv. p. 318.

♀. Port Dixon.

♀. Gray's Harbour.

This fine Skua was not uncommon in the Straits of Magellan and Smythe's Channel. Several times four or five birds followed us into our anchorage. They were very wary, and I found that the best way to procure them was to tie a dead Cormorant to a long string and let it drift away from the ship. A Skua would soon discover it and come down to tear it to pieces; when thus engaged it might be approached without difficulty.

12. *PELECANOIDES URINATRIX* (Gm.).

Pelecanoides urinatrix Salvin, Cat. B. xxv. p. 437.

Two males. Feb. 7th, Molineux Sound. Iris black; bill black; tarsi and toes blue-grey, with black line down back of tarsus, webs black.

I first saw these curious little Petrels the day before we reached the Straits of Magellan. I watched them all the afternoon rising under our bows, flying for a short distance with a feeble fluttering flight, and then diving again suddenly into the water. They were abundant all through the Straits and Smythe's Channel, but were not easy to shoot, as they dived at the flash of the gun. The stomach of this species is very large and soft, and is apparently little more than an enlargement of the proventriculus, having no visible muscular system: those examined were filled with fishes.

13. *PHALACROCORAX VIGUA* (Vieill.).

Phalacrocorax vigua Grant, Cat. B. xxvi. p. 378.

Two males. Gray's Harbour, Feb. 10th. Iris green; bill blackish above, light brown below; tarsi and feet black.

I saw a Cormorant of this species flying high overhead in Port Eden, but did not meet with others until just before we

reached Gray's Harbour, our last anchorage in the Channel. On arriving there I saw numbers and secured two males.

14. *PHALACROCORAX MAGELLANICUS* (Gm.).

Phalacrocorax magellanicus Grant, Cat. B. xxvi. p. 388.

♀. Churruca Bay, Feb. 4th.

♂, ♀ juv. Port Dixon, Feb. 5th.

Iris red; bare skin of face red.

One of the adults had a white spot on the ear-coverts and on the upper throat, being in transition from summer to winter plumage. The immature female had the abdomen thickly marked with very dark brown.

This species is particularly common in the Straits of Magellan. The breeding-season was over when we were there. During the first week in February I saw numbers in all the anchorages visited, feeding amongst the seaweed.

15. *PHALACROCORAX ATRICEPS* (King).

Phalacrocorax atriceps Grant, Cat. B. xxvi. p. 390.

♂. Port Dixon.

♂. Molineux Sound.

Iris green; eyelid blue; face and nasal caruncles yellowish green.

This fine Cormorant is the most abundant of the genus in Magellan Straits and Smythe's Channel. I saw numbers at every anchorage. As a rule, the birds fly together in flocks.

16. *PODICIPES AMERICANUS* (Garnot).

Podiceps americanus Grant, Cat. B. xxvi. p. 524.

♀. Gray's Harbour, Smythe's Channel, Feb. 9th. Iris red; bill and feet black.

This example, the only one seen, was shot by Lord Crawford in a narrow backwater in Gray's Harbour.

17. *SPHENISCUS MAGELLANICUS* (Forster).

Spheniscus magellanicus Grant, Cat. B. xxvi. p. 651.

♀ juv. Port Dixon.

I saw the first Penguin, an individual of this species, just before we reached the Straits of Magellan. I noted some

more in the Straits towards the western end, but very few in Smythe's Channel. Nearly all of them appeared to be young birds.

18. *CHLOËPHAGA POLIOCEPHALA* (Gray).

Chloëphaga poliocephala Salvad. Cat. B. xxvii. p. 137.

♀. Port Dixon. Iris black; bill black; tarsi and toes black in front, orange behind; webs black.

This beautiful Goose was not uncommon at the western extremity of the Straits of Magellan and in Smythe's Channel. It was not easy to approach.

19. *TACHYERES CINEREUS* (Gm.).

Tachyeres cinereus Salvad. Cat. B. xxvii. p. 373.

♂ ♀ ad., ♀ juv. Smythe's Channel.

(Ad.) Iris black; bill orange, nail black; tarsi and toes orange; webs black: weight $9\frac{1}{2}$ –10 lbs.

(Juv.) Iris black; bill and feet very dark brown: weight 5 lbs.

I certainly recognised but one species of Steamer-Duck, and out of a good many dozens met with never saw one fly. In most accounts of this bird it is stated that it rows itself along through the water with its little wings at an incredible rate. It certainly goes very fast, but practically it runs on the water flapping its wings clear of it. It is very wild and its skin is very tough. I found BB's were the only shot that had any effect, and then only at about fifteen yards distance. This Duck dives well and remains under water for a considerable time. The immature example obtained was shot by Lord Crawford with a rifle from the deck. Though nearly fully feathered on the back it had no feathers at all on the wings. I saw several examples in down, but was not able to secure one. The young travel through the water nearly as fast as the adults, in which the muscles of the legs are enormously developed. The call-note of this species, which I only heard uttered when there were young near, was a croaking quack. The pilot who took us through the Straits of Magellan told me that there are not so many of these Ducks there as formerly. I saw

only two in the Straits of Magellan, and did not obtain a specimen until we got into Smythe's Channel. The gizzards of those shot contained broken mussel-shells (*Mytilus magellanicus*).

Early on February 10th we left Gray's Harbour, our last anchorage, and entered the Gulf of Peñas. Towards evening it began to get very rough, and the next day it was so boisterous that I could not manage to skin birds at all. On February 12th (lat. 41° 42' S., long. 75° 17' W.) many Albatrosses (*Diomedea exulans*) followed us. On Feb. 14th we arrived at Valparaiso.

As we entered the bay I saw a great many birds—Petrels, Gulls, and Pelicans, and was surprised to observe numbers of Grey Phalaropes. Every evening I went into the bay in the launch to shoot. I found the sea-birds very wild. I went for a walk on shore once or twice, but birds were scarce and I only obtained specimens of two common species—*Zonotrichia pileata* and *Anætes parulus*.

The following is a list of the ten species of sea-birds procured in the Bay of Valparaiso:—

1. PHALAROPUS FULICARIUS (Linn.).

Crymophilus fulicarius Sharpe, Cat. B. xxiv. p. 693.

A female in full winter-plumage was obtained on Feb. 18th.

The Grey Phalarope was fairly abundant in Valparaiso Bay; it was seen every day that we were there in small flocks sitting on the water, but was not easy to approach.

2. LARUS FRANKLINI Swains. & Richards.

Larus franklini Saunders, Cat. B. xxv. p. 191.

Three adult males. Iris black; bill dark red; tarsi and toes liver-coloured.

This Gull was very abundant in Valparaiso Bay, especially amongst the shipping. It appeared to be acquiring the breeding-plumage—the hind part of the head being black, while the forehead and chin were mottled with white. The beautiful rosy pink of the breast and under-wing soon fades after the bird is skinned, even though not exposed to the light.

3. *LARUS MODESTUS* Tschudi.

Larus modestus Saunders, Cat. B. xxv. p. 223.

♂ imm., Feb. 17th. Iris hazel; bill black; tarsi and toes black, with olive-brown wash.

I saw several of these graceful little Gulls in Valparaiso Bay, but, like all the birds there, they were very wild.

4. *STERCORARIUS CREPIDATUS* (Gm.).

Stercorarius crepidatus Saunders, Cat. B. xxv. p. 327.

♂. Iris black; bill black; tarsi bluish grey; feet black.

I saw numbers of small Skuas in the bay at Valparaiso of both the light and dark phases. I thought at the time that they might be *S. pomatorhinus*. I secured one example only, as they were extremely wary. My specimen is almost wholly white below, with a quantity of white on the head; but, on comparing it with the large series in the British Museum, I find that it must be *S. crepidatus*, although it is far whiter than any other specimen in the series. This locality is much further south on the Pacific coast of America than any at which this species has been obtained before.

5. *PUFFINUS CREATOPUS* (Coues).

Puffinus creatopus Salv. Cat. B. xxv. p. 376.

♀. Iris hazel; bill yellowish flesh-coloured, tip black; tarsi and toes flesh-coloured, outer toe darker.

This Shearwater was not uncommon in Valparaiso Bay, but was very shy and very hard to shoot. It used to come closer in towards evening. I rarely saw it sitting on the water.

6. *PUFFINUS GRISEUS* (Gm.).

Puffinus griseus Salvin, Cat. B. xxv. p. 386.

♂ ♀. Iris black; tarsi and toes slate-coloured in front, black behind; webs black.

This Shearwater was very abundant off Valparaiso when we were there, though difficult to approach. Flocks of several hundreds used to come into the bay every evening and sit on the water. Before dusk I used to see them sweeping along the coast in a continuous stream over the sea outside the bay.

7. *OSSIFRAGA GIGANTEA* (Gm.).*Ossifraga gigantea* Salv. Cat. B. xxv. p. 422.

I shot a female of the Giant Petrel from the steam-launch while it was feeding on a dead dog. Skinning this bird was not pleasant; the ordinary Petrel-smell coupled with a flavour of dead dog lasted for some hours. I saw no other examples of it.

8. *PELECANOIDES GARNOTI* (Less.).*Pelecanoides garnoti* Salv. Cat. B. xxv. p. 439.

♂, ♀; ♀ juv. Iris black; bill black; tarsi and toes blue-grey in front, black behind; webs and outer toe black.

This Diving Petrel is common in Valparaiso Bay, and is much easier to shoot than *P. urinatrix*. It is readily distinguished from the latter by its large size, greyer flanks and under wing-coverts, and by having the outer toe black. In flight and habits it resembles *P. urinatrix*.

9. *DIOMEDEA MELANOPHRYS* Temm.*Diomedea melanophrys* Salv. Cat. B. xxv. p. 447.

♂. Iris hazel; bill black; tarsi and toes black, with olive-brown wash.

I saw a Black-browed Albatross several times close to the shore at Valparaiso. The gizzard of the specimen that I shot contained a fairly large fish.

10. *PELECANUS THAGUS* (Molina).*Pelecanus thagus* Grant, Cat. B. xxvi. p. 480.

♀. Bill yellow, with red tip; pouch yellow; tarsi and toes pale yellowish.

This fine Pelican is fairly abundant off Valparaiso, especially round the shipping, but all the birds were apparently immature. I spent some time watching them fishing; they fly round in circles, and suddenly drop head first into the water. I never saw one miss its fish. Several times I observed a Gull (*Larus dominicanus*) settle on a Pelican's head and try to get a fish out of its mouth.

On Feb. 21st I called at the "Museo del Historia Natural" at Valparaiso, and made the acquaintance of Prof. Carlos E. Porter, the Director. He took no special interest in birds, but shewed us the collection, which con-

sisted of a series of mounted specimens in large glass cases. They were mostly Chilian, but in many cases were not labelled.

We left Valparaiso on Feb. 24th for Easter Island, which is about 2000 miles west of Chile. We sailed the whole way and sighted Easter Island on the fourteenth day after leaving Valparaiso.

On Feb. 28th (lat. $31^{\circ} 15' 10''$ S., long. $87^{\circ} 40'$ W.) an example of *Procelsterna cinerea* followed us for some time, and the next day I saw three more of the same species. I noticed a few Petrels for about a week after leaving Valparaiso, but afterwards we sailed for days without seeing a bird of any sort. When we reached Easter Island I observed many Noddies, Sooty Terns, Gannets (*Sula piscator*), and Frigate-birds. There is said to be one indigenous land-bird on Easter Island, but I did not see it. It was described to me as being something like a Robin. I only had about six hours ashore. Easter Island is now used by a Chilian Company as a sheep- and cattle-run, and is covered entirely with grass; there are no trees, and I did not see any shrubs. I examined some of the huge stone images, for which the island is famous, and procured from the natives a large number of bones of the original inhabitants—presumably the people who carved these huge images. Easter Island is rightly called the “Mystery of the Pacific,” for, besides the images, there are several caves in the crater of the volcano (called *Rana Kao*), which have wonderful carvings of the rising sun, mermaids, &c. on their walls. But I believe that if a proper archæological expedition were made to the island a good deal of light might be thrown on the subject, as there must be a great many more relics to be found. The human bones are dug out from the piles of rocks on which the images are placed, and this leads to the supposition that the latter were erected as a monument over the bodies of great men.

I only obtained two species of birds on Easter Island, namely, a Tinamou (*Nothoprocta perdicaria*), introduced from Chile and breeding on the island, and the White Tern (*Gygis candida*), which was apparently nesting on the ledges inside the crater of the volcano. As regards mammals, rats

have been imported, and I was told that there are some very large wild cats on the island, no doubt descended from the domestic animal.

We left Easter Island on March 13th for Pitcairn Island. On the way we saw very few birds. When in lat. $27^{\circ} 27' 2''$ S., long. $125^{\circ} 59' 45''$ W., a Noddy (*Anous stolidus*) flew on board exhausted. Early on March 21st (lat. $26^{\circ} 10'$ S., long. $128^{\circ} 6'$ W.) a White Tern (*Gygis candida*) came on board and was brought to me.

At 6 A.M. on March 22nd we sighted Pitcairn Island. As we neared it I saw two dark Shearwaters and a Tropic-bird (*Phaëthon rubricauda*). The sea was like glass and the place looked very beautiful. This home of the mutineers of the 'Bounty' is a very small island; it appears to rise straight up from the sea to its highest point, 1000 feet above sea-level. The land is covered with banana- and cocoanut-trees, and from the sea may be seen here and there patches of deep red-coloured earth. We stayed at Pitcairn Island for a day and a half. I went all over it. There are at present about two hundred inhabitants—the descendants of the mutineers. They are a fine strong-looking race of people. Many sorts of fruit are grown in different parts, and the people live on these and on the goats, of which there are plenty. There is only one land-bird there (*Tutare vaughani*), which is fairly abundant. On the shores I saw *Phaëthon rubricauda*, *Anous stolidus*, *Gygis candida*, and *Procelsterna cinerea*. A rat (probably *Mus rattus*) has been introduced, but I did not see a specimen. The common Fowl runs wild over the island, and is shot when required for eating; its flesh is very tough. A crab (*Grapsus*) is common on the rocks round the island, and a lizard* (a skink) is abundant. I did not see any butterflies. I caught three microlepidoptera, some mosquitoes, and some crickets. The most interesting object to me was the curious Warbler, which has only recently been discovered.

* [The skink. Mr. Boulenger kindly informs us, is *Lygosoma cyanurum*, a widely-spread Polynesian species.—EDD.]



TATARE VAUGHANI. (Plate I.)

Tatara vaughani Sharpe, Bull. B. O. C. vol. xi. p. 2 (October 1900).

Five specimens: 3 ad. females, 1 young female, and 1 sex uncertain.

Adult. Iris black; bill pale brown; tarsi and toes bluish grey.

As *Tatara vaughani* has been only shortly diagnosed in the original description, I append a brief account of my specimens:—

(a) *Adult female.* Crown and mantle dark olive-brown, the feathers edged with pale yellow; nape of neck paler; rump and upper tail-coverts pale brown. Primary-coverts like the back; some of the greater wing-coverts brown and others white. Rectrices 12 in number, white with a pale lemon-yellow wash; remiges principally white, although some of the quills are partly brown, the long secondaries being mostly brown. Chin pale yellow, the feathers of the throat yellow with pale brown bases. Abdomen pale yellow; flanks slightly washed with tawny. Under tail-coverts pale tawny buff. Iris black, bill pale brown, tarsi and toes bluish grey. Whole length 6·5 inches, wing 2·9, tail 3·0.

(b) *Female*, which I take to be a younger bird, has more brown in the wings and a brown feather in the tail. The wings are very irregularly marked with brown. In specimen (a) the first primary of one wing is white, while that of the other wing is brown with a white tip.

(c) *Female*, apparently also immature, has several of the feathers of both wings and tail brown.

(d) *Immature.* Mantle rufous brown; crown and nape slightly paler; wings dark brown, the primaries and wing-coverts edged with pale rufous brown. Tail dark brown, almost black; in some lights paler transverse bars may be seen on the rectrices. Chin and upper throat rufous buff; flanks paler; middle of abdomen nearly white; under tail-coverts rufous buff.

(e) One of the immature examples has a white feather

just appearing in the tail, and the sixth primary of one wing is entirely white.

This remarkable little bird, which is numerous all over the island and is the only land-bird, was discovered by Lieut. Vaughan, of H.M.S. 'Duke of Wellington.' He brought home six specimens in spirit and presented them to the British Museum. Dr. Sharpe named the species after its discoverer. The adult bird is remarkable for having the rectrices and most of the remiges white or creamy white. Until I obtained my specimens, the plumage of the young was unknown. It differs chiefly from the adult in having no white on the wings or tail. The upper parts are olive, with narrow paler edges to the feathers, and the under parts pale rufous buff. In its habits this little bird resembles a Warbler (*Sylvia*); it lives in the orange-trees and bananas which thickly cover the island, where there are no reeds and no streams of water. Its alarm-note is a loud "chek-chek." The young birds make more noise than the adult. I heard and shot one immature bird which was screaming almost like a Jay. At the highest point of the island (1000 ft.) I found it more abundant than lower down, but I saw several individuals close to the landing-place. I was told that the nest was placed in a thick bush or tree about 6 to 8 ft. from the ground, but I did not see one. The adults look very curious as they fly, the mixed white and brown primaries giving them the appearance of Pied Sparrows. The people of Pitcairn call them "Sparrows."

We left Pitcairn Island on March 23rd for Tahiti, Society Islands. On March 26th four Tropic-birds (*Phaethon rubricauda*) followed us all day; their cry much resembled that of a Tern. I saw this bird several times sitting on the water. On March 28th (lat. $23^{\circ} 20' 23''$ S., long. $142^{\circ} 58' 28''$ W.) I observed several examples of *P. rubricauda* and *P. lepturus*. On March 29th, nearly twenty-four hours before we sighted land, I saw two examples of *Gygis candida*. We made Tahiti on March 30th, and landed the same day at Papeete. The only birds I noticed off the island were *Gygis candida*

and *Anous stolidus*, but with a strong glass I could discern 'Tropic-birds (*Phaëthon lepturus*) flying high up against the forest-covered peaks. A Swift (*Collocalia*) was flying about the town, and imported Minahs (*Gracula*) were abundant. On applying for leave to shoot, I was much disappointed to be told that a law had just been passed to forbid the killing of birds, and that the Governor was "unable" to make an exception in my favour. I may say that I saw very few birds of any sort about the seaboard, and it was stated that of late years the rats had killed nearly all of them.

I therefore spent my time in collecting butterflies. I found them very scarce, and only obtained examples of two species. I caught, however, a number of microlepidoptera. The French Governor of the islands kindly gave us a large Pigeon in a cage, which had been brought from the island of Makattea, one of the Paumotu group. Unfortunately its wings had been cut, while it had been placed in a cage without any perches and had consequently worn its tail down very short. We kept it alive till just before we reached home. I skinned it and preserved the sternum and gizzard.

This imperfect specimen appears to belong to a new genus and species, perhaps allied to *Calenas*, but requires careful examination and comparison before it can be described.

On April 17th, 1903, we left Tahiti, for Tutuila, in the Samoan group, where we arrived in the afternoon of April 22nd. As we neared the island I saw numbers of flying-fishes. During the voyage I watched these fishes carefully, both with and without glasses, and distinctly saw them moving their wings in flight. The harbour of Pago-pago at Tutuila is about two miles in length, and is almost in the middle of the island. The formation is volcanic, and the harbour appears to occupy the place of an ancient crater. We landed as soon as we anchored, and walked through the native village up part of the hill behind. Birds were fairly numerous, especially *Ptilotis carunculata*. I saw also a Parroquet and several examples of *Myzomela nigriventris*. A large Fruit-bat was very abundant at dusk, when it comes down from the hills.

The next day I walked up the hill again to a height of

about 1000 ft., at which altitude *Gygis candida*, *Anous stolidus*, and *Phaëthon lepturus* were fairly plentiful, flying about among the cocoanut-trees. I saw also numbers of Kingfishers and shot several of them, but, owing to the very long and thick undergrowth, I lost all but one. Tutuila is a very beautiful island, mountainous and thickly wooded. It rained hard all the time that we were there, so we did not see the tops of the peaks so clearly as we might have done. I obtained examples of the following three species of land-birds:—

1. *PTILOTIS CARUNCULATA* (Gm.).

Ptilotis carunculata Gadow, Cat. B. ix. p. 225.

♂. Iris pale yellow; bill dark brown; gape and wattles yellow.

This was the most abundant bird at Tutuila, usually keeping to the tops of the cocoanut-palms. It has a loud and pleasant thrush-like song and a variety of call-notes, the commonest being a loud laugh like that of a woodpecker.

2. *APLONIS ATRIFUSCA* (Peale).

Aplonis atrifusca Sharpe, Cat. B. xiii. p. 134.

♂. Iris black; bill black; tarsi and toes dark brown.

This Starling was fairly abundant in the cocoanut-trees and was very noisy.

3. *HALCYON PEALII* Finsch et Hartl.

Halcyon pealii Sharpe, Cat. B. xvii. p. 266.

♂. Iris black.

We had only one day at Tutuila, and although I saw several Kingfishers, I managed to secure only this specimen. Its gizzard contained green caterpillars. I shot it at an altitude of about 300 ft., sitting in a cocoanut-palm.

This species is peculiar to the island; there are two specimens of it in the British Museum.

We left Tutuila for the neighbouring island of Upolu at 6 A.M. on April 21th. Upolu was just visible from Tutuila. Between the two islands I saw examples of *Phaëthon lepturus*,

Gygis candida, *Anous stolidus*, and *Sula leucogastra*. At 5.30 P.M. we entered the coral-reef and anchored off Apia. It was pouring with rain and the whole island of Upolu was nearly hidden by clouds.

The British Consul at Apia kindly invited me to shoot over his ground in the hills behind Apia, at an altitude of about 1000 ft. *Lalage pacifica* and *Todirhamphus recurvirostris* were fairly common among the trees in the streets of the town. I made enquiries about *Didunculus strigirostris*, but was told that it was getting very rare, and was only to be met with high up in the mountains, where it is said to keep up in the trees. But it was impossible to get a specimen during our short stay.

On April 26th I walked along the shore, about six miles out of Apia, and returned by an inland path. I found *Charadrius dominicus* abundant along the beach, the adults having nearly attained their full breeding-plumage. I saw also several examples of *Totanus incanous*. The next day I went up to the Consul's place in the hills and obtained about thirty specimens of the following twelve species of land-birds :—

1. LALAGE PACIFICA (Gm.).

Lalage pacifica Sharpe, Cat. B. iv. p. 97.

♂. Iris black.

I found this Flycatcher fairly common at Apia, but only in the town. Outside the boundaries, where I was able to shoot, I seldom saw it. It is a very noisy bird, and has the actions of a Warbler (*Sylvia*).

2. PETRÆCA PUSILLA Peale.

Petræca pusilla Sharpe, Cat. B. iv. p. 168.

♂, ♀ juv. Iris hazel; bill dark brown; tarsi and toes yellowish brown.

Of this species I saw only the two examples obtained: they were sitting on the bushes at the side of a hill-road and uttered a "check-check" like a Wheatear. The immature example shews the spotted plumage of the nestling on the mantle.

3. RHIPIDURA NEBULOSA Peale.

Rhipidura nebulosa Sharpe, Cat. B. iv. p. 315.

Sex not ascertained. Iris hazel.

I saw but few individuals of this species at Apia, and that which I shot was the only one met with at sea-level. At 1000 feet the bird was rather more abundant. I heard its song once. A male was sitting on a bare branch singing and spreading its tail.

4. MYIAGRA ALBIVENTRIS (Peale).

Myiagra albiventris Sharpe, Cat. B. iv. p. 377.

♂. Iris black.

This was the only example that I saw. It was obtained at an elevation of about 1000 feet.

5. PACHYCEPHALA ICTEROIDES (Peale).

Pachycephala icteroides Gadow, Cat. B. viii. p. 204.

600–1000 ft.

♂ ♀. Iris hazel; bill, tarsi, and toes black.

This bird was fairly common at an altitude of about 600 ft. It was seeking food in the tall trees amongst the leaves, like a Warbler (*Sylvia*).

6. MYZOMELA NIGRIVENTRIS Peale.

Myzomela nigriventris Gadow, Cat. B. ix. p. 130.

♂. Iris black; bill, tarsi, and toes black.

As common on Upolu as on Tutuila, but always keeping high up in the cocoanut-palms, and very active and difficult to shoot; it has a shrill chirp, but I heard no song.

7. PTILOTIS CARUNCULATA (Gm.).

Ptilotis carunculata Gadow, Cat. B. ix. p. 225.

♀. Iris pale yellow; bill dark brown; gape and wattles yellow.

This is the most abundant bird in the Samoan Islands. It usually keeps to the tops of the cocoanut-palms.

8. APLONIS ATRIFUSCA (Peale).

Aplonis atrifusca Sharpe, Cat. B. xiii. p. 134.

♀. Iris black; bill black; tarsi and toes dark brown.

This species is fairly abundant on Upolu. It is very noisy and is seen, as a rule, high up in the cocoanut-palms.

9. COLLOCALIA FRANCICA (Gm.).

Collocalia francica Hartert, Cat. B. xvi. p. 503.

♂. Iris black; bill black; tarsi and toes dark brown.

This little Swift was very common on Upolu, and had exactly the actions of our Common Swift (*Cypselus apus*).

10. TODIRHAMPHUS RECURVIROSTRIS (Lafr.).

Todirhamphus recurvirostris Sharpe, Cat. B. xvii. p. 290.

♀ ♀. Iris black; tarsi and toes brown.

This little Kingfisher was common on Upolu. It is surprising to one unaccustomed to its habits to see a Kingfisher suddenly fly out of a thick bush; but hedges along the roadside, far from water, seem to be a favourite place for this species. Its food consists of beetles and caterpillars.

11. PTILOPUS FASCIATUS (Peale).

Ptilopus fasciatus Salvad. Cat. B. xxi. p. 98.

Upolu, Samoa, 1000 ft.

♂ ad., ♂ juv. This beautiful little Pigeon is not uncommon on Upolu at an altitude of about 1000 ft., but is very shy. It feeds on the fruit of a tall tree; this fruit is about the size of a large olive and is swallowed entire.

12. DEMIEGRETTA SACRA (Gm.).

Demiegretta sacra Sharpe, Cat. B. xxvi. p. 137.

♂ in the blue phase.

This little Egret is very abundant in all the Samoan Islands, and I also saw it at Tahiti. I observed more of the blue than of the white form. It is usually seen walking about on the coral-reefs, but I observed several individuals perching on trees.

We left Apia on April 29th for Suva, the capital of the Fiji Islands. On April 30th (lat. $15^{\circ} 9' 9''$ S., long. $175^{\circ} 50'$ W.) an immature example of *Sula piscator* flew on board and was captured. Early on the morning of May 3rd we entered the fine harbour of Suva, in the Island of Viti-Levu. I landed and walked into the country and found birds abundant, but difficult to see, as the woods are very thick. The mongoose has been introduced here and has become a nuisance; it was

imported to kill the rats, and when these were gone it began to eat the chickens and even the young pigs. A Minah has also been introduced and is common about the town. As we were so short a time in Fiji, I had only two days' collecting, both of which I passed in a mangrove-swamp on a river-bank. We made one visit to the reef outside the harbour, and took two natives with us to look for shells, as they are very clever at finding them. I obtained examples of nine species of birds on Viti-Levu near Suva, namely:—

1. PINAROLESTES VITIENSIS (Hartl.).

Pinarolestes vitiensis Sharpe, Cat. B. iii. p. 299.

♀. Iris hazel; bill dark brown; tarsi and toes lead-coloured.

This specimen was obtained near the ground in the dense forest; it was the only specimen of the species that I saw.

2. PINAROLESTES NIGROGULARIS Layard.

Pinarolestes nigrogularis Sharpe, Cat. B. iii. p. 301.

♂. Iris black; bill pale green, with black streaks along the culmen; tarsi and toes lead-blue.

I shot this specimen in a mangrove-swamp. It was the only example that I observed.

3. RHIPIDURA LAYARDI (Salvad.).

Rhipidura layardi Sharpe, Cat. B. iv. p. 336.

Sex not ascertained. Bill dark brown, lower mandible white; tarsi and toes brown.

This Flycatcher was fairly common near Suva. I watched a pair which I believe had a nest, but I was unable to find it.

4. PACHYCEPHALA GRAEFFII (Hartl.).

Pachycephala graeffei Gadow, Cat. B. viii. p. 202.

♂ ad. Iris hazel; bill black; tarsi and toes lead-blue.

♂ juv. Tarsi and toes brown with a blue tinge.

I saw but few of these birds. The adult was in grand plumage; the younger individual was in moult, some of the golden feathers appearing on the abdomen. These birds were very shy, and I observed nothing of their habits.

5. MYZOMELA JUGULARIS (Peale).

Myzomela jugularis Gadow, Cat. B. ix. p. 136.

♂; ♂ juv. Iris black; bill black; tarsi and toes brown, soles yellow.

This Honey-sucker was fairly common in the high bushes near Suva.

6. ZOSTEROPS EXPLORATOR Layard.

Zosterops explorator Gadow, Cat. B. ix. p. 172.

♂. Iris pale brown; bill dark brown, base of lower mandible blue; tarsi and toes lead-blue.

This White-eye was rather common at Suva. I usually saw it in small flocks, especially in the gardens of the town.

7. APLONIS VITIENSIS Layard.

Aplonis vitiensis Sharpe, Cat. B. xiii. p. 131.

♀. Iris hazel; bill black; tarsi and toes brown.

The example obtained was the only one seen. I shot it close to a mangrove-swamp, where it was sitting in some high bushes.

8. HALCYON SOLOMONIS (Ramsay).

Halcyon solomonis Sharpe, Cat. B. xvii. p. 280.

♀. Iris black; bill black, base of lower mandible white; tarsi and toes brown.

I shot my example of this Kingfisher in a mangrove-swamp near Suva. The range usually ascribed to *H. solomonis* extends only as far eastwards as the New Hebrides, and the Fijis seem to be outside of it. But the specimen does not agree with the type of *H. suvensis* Sharpe, and matches examples of *H. solomonis* in every respect.

Only *Halcyon sacra*, which is quite a different species, is mentioned in Wiglesworth's list ('Aves Polynesiæ,' p. 9).

9. CARPOPHAGA LATRANS (Peale).

Carpophaga latrans Salvad. Cat. B. xxi. p. 202.

♂. Iris red; bill dark brown; tarsi and toes dull red.

This specimen was purchased in the flesh at Suva. I did not see living examples of the species, which is peculiar to the Fiji group.

We left Fiji on May 6th, 1903. On May 13th I saw several Petrels (*Oceanites oceanicus*). Late at night on May 16th (lat. $9^{\circ} 4' 55''$ S., long. $144^{\circ} 20'$ E.) a young *Sula leucogastra* was caught on board, and on the same occasion I saw numbers of *Sterna fuliginosa*. That day we entered Torres Straits, and at night anchored off Stevens Island. On May 17th we passed many coral islets, flying over which were numbers of the smaller Frigate-bird (*Fregata ariel*). Several White Egrets passed us, and we could see flocks of these birds sitting on trees on the islands. Later in the day an individual of *Larus novæ-hollandiæ* followed us; this was the first Gull seen since leaving Chile. At 6.30 A.M. the next day we entered the harbour of Thursday Island. I went ashore soon afterwards and saw numbers of birds, and shot several. I put up two large Bustards, probably *Otis australis*.

Thursday Island is covered in many places with the large and curious nests of the white termite, some of which were eight feet in height. I made several visits to the reef which surrounds the harbour. While we were at Thursday Island I went in the launch to Prince of Wales Island, about five miles distant, and found a fair number of birds there. The islands in Torres Straits seem to be halting-places for many species migrating from New Guinea to Australia and *vice versa*. I saw some Plovers of the genera *Charadrius* and *Ægialitis* at Thursday Island, but was not able to obtain any of them.

I secured examples of the following twelve species of birds on the two islands of Torres Straits which we visited :—

<i>Chibia bracteata</i> (Gould).	<i>Hirundo neoxena</i> Gould.
<i>Graucalus hypoleucus</i> Gould.	<i>Podargus papuensis</i> Quoy & Gaim.
<i>Cinnyris frenata</i> (S. Müll.).	<i>Merops ornatus</i> Lath.
<i>Myzomela obscura</i> Gould.	<i>Numenius variegatus</i> (Scop.).
<i>Philemon buceroides</i> Swains.	<i>Tringa subarquata</i> (Guldenst.).
<i>Dicaeum hirundinaceum</i> (Shaw & Nodder).	<i>Sterna bergii</i> Licht.

As will be seen, these are nearly all well-known Australian species, but I may make the following remarks :—

Myzomela obscura is fairly common on both these islands;

I found a nest containing one egg which resembled that of a Great Tit. The structure was very thin and made of fine roots; it was placed amongst the leaves of a willow tree on Prince of Wales Island.

On Thursday Island on May 18th I shot a Curlew-Sandpiper (*Tringa subarquata*) on the coral-reef. It was the only specimen that I saw, and was in full winter plumage. This Sandpiper has been found occasionally as far south as Tasmania, and there are several Australian specimens in the British Museum.

We left Thursday Island on May 23rd for Singapore. On the night of May 24th (lat. $10^{\circ} 6' S.$, long. $138^{\circ} 17' E.$) an example of *Phaëthon rubricauda* which flew on board was caught and brought to me. On May 28th we sighted Timor. On May 30th we were in view of Lombok, the highest peak of which (12,000 feet alt.) was just apparent above the clouds. On June 2nd we passed Caumata Island, in Caumata Passage, between the Java Sea and the China Sea. On June 3rd, as we passed Bintang, I saw two specimens of *Sterna fuliginosa*, and at midnight we arrived at Singapore.

The next day I visited the Botanical Gardens (under the care of Dr. Ridley) and the Raffles Museum, where there is a collection of birds. I was surprised to find that the Sparrows all about the town appeared to be identical with our Tree-Sparrow (*Passer montanus*). I was not able to do any bird-collecting at Singapore.

On June 9th we left Singapore for Colombo. I noticed several Brahminy Kites (*Haliastur*) and two Ospreys (*Pandion haliaëtus*) as we went out. On June 15th (lat. $5^{\circ} 23' 39' N.$, long. $84^{\circ} 45' 30'' E.$) a large Skua (*Megalestris antarcticus*) flew close past the ship, and I saw it distinctly. I afterwards noticed in the Colombo Museum two specimens of this species, which had been taken in Ceylon*. On June 16th (lat. $5^{\circ} 21' 46'' N.$, long. $82^{\circ} 17' 21'' E.$) an example of *Phaëthon indicus* flew on board and was brought to me. On June 17th we arrived at Colombo. Outside the harbour

* See also Legge, 'Birds of Ceylon,' p. 1050.

I saw *Sterna fuliginosa* and *S. dougalli*. In the harbour there were numbers of Brahminy Kites (*Haliastur indus*) and swarms of Crows (*Corvus splendens*); the latter were in hosts all over the ships in the harbour, and throughout the town also: there was quite a "rookery" in some trees by the roadside in one of the streets. I had no opportunities for collecting at Colombo. I visited the Museum, in the gardens of which I saw what I believe to have been an immature example of *Motacilla borealis*.

We left Colombo on June 20th for Aden. On June 30th we sighted Cape Guardafui, and reached Aden on July 2nd. The barren hills round it were fearfully hot, and I saw very few land-birds there. I obtained only one, a small Rock-Chat (*Myrmecocichla melanura*). *Milvus migrans* was common about the harbour. I went out into the gulf in the evening and shot several Terns (*Sterna media*, *S. bergii*, and *S. anæsthesia*) and a Gull (*Larus hemprichi*).

We left Aden on July 3rd and entered the Red Sea next day. *Larus hemprichi* was seen, and followed us for some time. On July 9th we passed Sinai, when *Larus leucophthalmus* appeared and remained with us all day. Early the next morning we got to Suez and started through the Canal, arriving at Port Said on July 11th.

The following morning I went by train from Port Said to Kantara, alongside of the Suez Canal. From Kantara I walked to the east end of Lake Menzaleh, and found birds fairly abundant, especially *Aëdon galactodes*. I noticed *Acrocephalus stentoreus* breeding in the reeds near the lake, but was not able to get out to the nest. The song was very loud and harsh, and could be heard at some distance. Several Swallows (*Hirundo savignii*) were flying about. I also saw a greenish Warbler, probably *Hypolais polyglotta*.

We finally left Port Said on July 13th, and, after being detained three days at Gibraltar in quarantine, arrived at Cowes Roads on August 1st.

Altogether during our voyage we had covered about 38,000 miles, 15,000 of which were under sail. We were at anchor 103 days or parts of days, and at sea 153 days.

In concluding my ornithological journal I wish to be allowed to offer my best thanks to Lord Crawford for his very great kindness in taking me with him, as Naturalist, during his journey round the world. It is obvious that on a voyage of this sort opportunities for collecting on land must be few and often hurried. If the result, as regards birds, appears to be rather meagre, I can only say that I did my best on every possible occasion. The number of specimens of birds obtained during the voyage was 225, all of which have been presented by Lord Crawford to the British Museum. The skins were made by my own hands, and labelled with date and locality. I have determined them mainly by comparison with specimens already in the National Collection, and hereby offer my very best thanks to Dr. Bowdler Sharpe, Mr. Ogilvie-Grant, and their excellent assistant Mr. Charles Chubb for the kind aid which they rendered me throughout.

IV.—*On the Breeding of some of the Waterfowl at Gooilust in the Year 1903.* By F. E. BLAAUW, C.M.Z.S.

ALTHOUGH the summer as well as the greater part of the spring of the year 1903 have been unusually damp and cold, yet waterfowl have bred well, and their chicks have nearly all survived. The first birds to breed at Gooilust were, as usual, the *Cereopsis* Geese (*Cereopsis novae-hollandiae*). They are kept in a six-acre enclosure, in which some Sunda oxen (*Bos sondaicus*) and antelopes (*Damalis albifrons*) are confined during the summer months, both being the respectful servants of the Geese. In the beginning of February the *male* (which is a great nest-builder for a Goose) made a rather elaborate structure on a heap of straw lying against the south side of a brick building which houses the above-named ruminants during the winter. The female laid five eggs and sat on them with great assiduity, notwithstanding occasional frost and snow. All the time the male kept a sharp look-out, and always stood over the nest whilst the